REMARKS

Specification and Drawings

Applicant has amended the specification and drawings to correct typographical errors. Support for these amendments can be found throughout the originally filed specification and drawings. No new matter has been added.

As there are numerous amendments to the specification, the Applicant will submit an amended specification if and when requested by the Examiner. Furthermore, the Applicant will file formal drawings replacing all the previously filed drawings once all the claims are allowed.

§ 112 rejection

The Examiner rejected claim 23 under 35 U.S.C. § 112, second paragraph. Specifically, the Examiner found that antecedent basis for "a third switch" in claim 23 has previously been established in claim 19. Accordingly, Applicant has amended claim 23 to change "a third switch" to "a fourth switch."

§ 103(a) rejection

The Examiner rejected claims 1 to 26 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,260,079 ("White") in view of U.S. Patent No. 4,220,876 ("Ray."). Addressing claim 1, the Examiner stated:

> White teaches all the limitations of the claim but does not teach that a first switch is coupled between the buses to decouple the first and second buses when a voltage falls below a predetermined threshold.
>
> Ray teaches a switch operative to decouple a device from a bus when a voltage falls below a predetermined threshold [Abstract]. When an un-powered device taught by White is decoupled from the external bus using the teachings of Ray, the internal bus of the un-powered device is thereby decoupled from the internal buses of other devices on the external bus, substantially as claimed.

March 12, 2004 Office Action, page 3, paragraph 6. Applicant respectfully traverses because Ray does not disclose a switch that decouples two buses when a voltage falls below a threshold.

Ray discloses a bus termination circuit 44 connected between a device 10 and a bus 50. Bus termination circuit 44 does not load bus 50 when the power to device 10 is turned off or falls below a threshold level.

> If instrument 10 is turned off, the voltage on terminal 52 falls to zero volts. As the power supply voltage magnitude becomes less than the predetermined level of about 2.5 volts, for instance, as established by the anode-to-cathode junctions of threshold setting diodes 68, 70 and 72 and the base-to-emitter junction of transistor 64, current no longer flows through the path including resistor 66 and diodes 68, 70 and 72. Consequently, transistor 64 turns off and provides a high impedance at the cathode of diode 62. Since no current is able to flow through diode 62, no current is also able to flow through resistor 60. Thus, resistor 60 appears to be disconnected or is isolated from node 48 in response to transistor 64 being rendered non-conductive. Thus, resistor 60 provides no loading to line 50 when power is removed from terminal 52. Moreover, as the power supply voltage on terminal 52 falls below another predetermined level of about 3.0 volts, for instance, threshold setting diode 56 becomes back-biased and no current can flow therethrough. Consequently, resistor 58 appears to be disconnected or isolated from node 48. Since no current flows through either resistor 58 or 60, then node 48 presents a high impedance to bus 50. Thus, circuit 44 does not load bus 50 when the system or subsystem including circuit 44 is turned off or the supply voltage magnitude falls below a predetermined threshold of 2.5 volts, which is the lower of the two thresholds.

Ray, col. 4, lines 13 to 40. As described above, bus termination circuit 44 only disconnects resistors 58 and 60 from bus 50 when the power to device 10 is turned off or when the supply voltage falls below a threshold level. This prevents resistors 58 and 60 from loading bus 50. However, the remainder of device 10 remains connected to bus 50 at terminal 46 (specifically input terminal 46 of device 10 and bus 50 are still connected).

As described in the Description of Related Art in the present application, electrical discharge (ESD) diodes on an I2C pin of a device may become forward biased to ground when the device loses power. Specification, p. 2, lines 21 to 23. When this occurs, the entire I2C bus becomes grounded and other operational devices cannot communicate over the I2C bus. Specification, p. 2, lines 23 to 25.

To prevent this from happening, the present application uses a switch to decouple portions of the I2C bus when one portion becomes grounded. In one embodiment shown in Fig. 7B, a switch 952 couples (1) an I2C bus 920 of enclosure controller A and (2) an I2C bus 922 of enclosure controller B. Enclosure controller A uses I2C bus 920 to communicate with various components in the same power domain (e.g., repeaters A0 and A1 in power domain A). As I2C bus 920 is coupled

to I2C bus 922, enclosure controller B can also communicate with these components. If enclosure controller B loses power in the other power domain (e.g., power domain B) and grounds its I2C pin, then I2C bus 922 would becomes grounded. In response to enclosure controller B losing power, switch 952 decouples I2C bus 920 from I2C bus 922 so that I2C bus 920 does not become grounded and enclosure controller A can continue to communicate with the components in power domain A over I2C bus 920.

If bus termination circuit 44 of Ray replaces switch 952 in Fig. 7B, then buses 920 and 922 would remain coupled when enclosure controller B loses power. This is because bus termination circuit 44 of Ray only disconnects resistors 58 and 60 from bus 50 and not input terminal 48 from bus 50. This causes both buses to become grounded and the invention would therefore be inoperable for its intended purpose. Accordingly, the combination of White and Ray cannot disclose "a first switch ... operable to de-couple the first and the second buses" as recited in claim 1.

Furthermore, there is no motivation to combine White and Ray. The Examiner stated that "Ray teaches that ... the loss of power, either intentional or accidental, to a device on the bus would not affect the electrical load on the bus [col. 1, lines 35-57]." March 12, 2004 Office Action, p. 3, paragraph 6. Thus, the Examiner agreed that bus terminating circuit 44 of Ray is used to prevent loading on a bus 50 by a device when the device is turned off. As explained above, this does not decouple the device from bus 50, but only disconnects resistors 58 and 60 of bus terminating circuit 44 from bus 50 to prevent loading. Therefore Ray cannot provide the motivation for decoupling a device from a bus.

Claims 2 to 13 depend from claim 1 and are patentable over White in view of Ray for at least the same reasons that claim 1 is patentable.

Independent claim 14 is patentable over White in view of Ray for at least the same reasons that claim 1 is patentable. Claims 15 to 26 depend from claim 14 and are patentable for at least the same reasons as claim 14.

Conclusion

In summary, claims 1 to 26 were pending in the above-identified application when last examined. Applicant has amended claims 2, 3, 5 to 9, 11, 15, and 23. For the above reasons,

Applicant respectfully requests the Examiner to withdraw the rejections and allow claims 1 to 26. Should the Examiner have any questions, please call the undersigned at (408) 382-0480.

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Respectfully submitted,

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